

ABSTRACT OF THE DISCLOSURE

Methods are provided for processing a substrate for depositing an adhesion layer having a low dielectric constant between two low k dielectric layers. In one aspect, the invention provides a method for processing a substrate including introducing an organosilicon compound and an oxidizing gas at a first ratio of organosilicon compound to oxidizing gas into the processing chamber, generating a plasma of the oxidizing gas and the organosilicon compound to form an initiation layer on a barrier layer comprising at least silicon and carbon, introducing the organosilicon compound and the oxidizing gas at a second ratio of organosilicon compound to oxidizing gas greater than the first ratio into the processing chamber, and depositing a first dielectric layer adjacent the dielectric initiation layer.